LISTING OF CLAIMS:

1. (**Twice Amended**) Apparatus for determining speed and acceleration of a motor vehicle traveling on a roadway comprising:

a first radiation source producing a [visible entrance laser] first beam and arranged at one side of the roadway;

a first detector arranged at an opposite side of the roadway to receive said [visible entrance laser] first beam from said first radiation source for producing an output signal indicating a presence or absence of the [visible entrance laser] first beam;

a second radiation source producing a [visible exit laser] second beam and arranged at said one side of the roadway and being spaced apart by a predetermined distance from said first radiation source;

a second detector arranged at said opposite side of the roadway to receive said [visible exit laser] second beam from said second radiation source for producing an output signal indicating the presence or absence of the [visible exit laser] second beam;

wherein front and rear wheels of the motor vehicle each interrupt said [visible entrance laser] first beam and said [visible exit laser] second beam and the interruptions are detected by said first and second detectors; [and]

vehicle emissions testing means for obtaining exhaust emissions information for the motor vehicle; and

analyzing means receiving said output signals from said first and second detectors for calculating the speed and acceleration of the motor vehicle to be used in combination with the obtained exhaust emissions information.

2. (**Twice Amended**) The apparatus according to claim 1 wherein the analyzing means further comprises:

timing means for measuring time;

determining means for producing a pulse when said front wheel and rear wheel passes into and departs from said [visible entrance laser] first beam and said [visible exit laser] second beam, respectively;

memory means for storing each measured time when said determining means produces said pulse indicating that said front and rear wheels passed into and out of said [visible entrance laser] first beam and said [visible exit laser] second beam, respectively; and

calculating means for calculating said speed and acceleration using said predetermined distance and each of said measured times recorded by said recording means.

3. (**cancelled**)

4. The apparatus according to claim 2 wherein said predetermined distance is substantially equal to 70 inches.

5. (**Amended**) The apparatus according to claim 2 wherein said [visible entrance laser] first beam and said [visible exit laser] second beam are unmodulated.

6. The apparatus according to claim 2 wherein said first detector and said second detector include a photo transistor having a lens and a bandpass filter.

7. (**Twice Amended**) A method for determining speed and acceleration of a motor vehicle traveling on a roadway comprising the steps of:

producing a plurality of [visible laser] beams spaced apart by a predetermined distance and directed across the roadway;

arranging the plurality of [visible laser] beams at a height to be interrupted by front and rear wheels of the motor vehicle;

determining when the front and rear wheels pass into and out of each of said plurality of [visible laser] beams;

producing a time measurement at each determined occurrence;

recording each of said time measurements when the front and rear wheels pass into and out of each of said plurality of [visible laser] beams, respectively; [and]

calculating a speed value and an acceleration value from said fixed distance and each of the time measurements recorded in said step of recording;

obtaining exhaust emissions data from the motor vehicle; and

utilizing the calculated speed value and the calculated acceleration value in an analysis of the obtained exhaust emissions data.

8. (**cancelled**)

9. (**Twice Amended**) Apparatus for detecting acceleration of a motor vehicle passing along a roadway comprising:

means for producing first and second [visible laser] beams spaced apart by a predetermined distance on one side of the roadway and arranged at a height above the roadway so as each to be interrupted by a front wheel and a rear wheel of the motor vehicle;

detector means arranged at a side of the roadway opposite said one side for receiving said first and second [visible laser] beams and producing respective output signals indicating interruptions of said first and second [visible laser] beams by the front and rear wheels of the motor vehicle;

measuring means for receiving said output signals from said detector means for producing time measurements at each occurrence of said interruptions of said first and second [visible laser] beams and for producing time measurements at each resumption of each interrupted first and second [visible laser] beams; [and]

vehicle emissions testing means for obtaining exhaust emissions information for the motor vehicle; and

calculating means receiving said time measurements from said measuring means for calculating an acceleration of the motor vehicle, based on said predetermined distance, to be used in combination with the obtained exhaust emissions information.

10-20. (**cancelled**)